

[0029] In the specification and drawings, components similar to those described or illustrated in a drawing thereinabove are marked with like reference numerals, and a detailed description is omitted as appropriate.

First Embodiment

[0030] FIG. 1 is a schematic perspective view illustrating the configuration of a display device according to a first embodiment of the invention. FIGS. 2A and 2B are schematic views illustrating the configuration of the display device according to the first embodiment of the invention.

[0031] Namely, FIG. 2A is a plan view, and FIG. 2B is a cross-sectional view along line A-A' of FIG. 2A.

[0032] As illustrated in FIG. 1 to FIG. 2B, a display device 10 according to the first embodiment of the invention includes a flexible first substrate 110 and a flexible second substrate 120 provided facing the first substrate 110.

[0033] In the case where the display device 10 is an active matrix display device, for example, multiple thin film transistors (TFTs) disposed in a matrix configuration and pixel electrodes connecting thereto are provided on the first substrate 110. Thus, a display part 180 includes a region in which the pixel electrodes are provided.

[0034] In the case where the display device 10 is a passive matrix display device, multiple band-shaped first electrodes are provided on the first substrate 110, and multiple band-shaped second electrodes are provided on the second substrate 120 facing the first substrate 110. The second electrodes are aligned, for example, in a direction orthogonal to the first electrodes. In such a case, the display part 180 includes a region in which the first electrodes and the second electrodes intersect. In other words, in such a case, the display part 180 may be defined on the first substrate 110 to correspond to the second electrodes provided on the second substrate 120. Also in such a case, the display part 180 may be defined on the first substrate 110.

[0035] Hereinbelow, the case is described in which the display device 10 is assumed to be an active matrix display device.

[0036] In the display device 10, a display component 150 is provided in the display part 180 between the first substrate 110 and the second substrate 120 to produce at least one of an optical characteristic change and a light emission. For example, a liquid crystal, organic EL, etc., may be used as the display component 150. In other words, in the case where a liquid crystal is used as the display component 150, a molecular orientation of the liquid crystal changes and optical characteristics such as the refractive index, optical activity, scattering properties, etc., change based on a provided electrical signal. Also, the absorbance changes in the case where, for example, a dichroic dye is added to the liquid crystal. On the other hand, light emission occurs in the case where, for example, an organic EL is used as the display component 150.

[0037] The display device 10 according to this embodiment includes a wiring substrate 130. At least a portion of the wiring substrate 130 is interposed between the first substrate 110 and the second substrate 120 outside the display part 180 in, for example, a connection region 190.

[0038] Wiring, not illustrated, is provided on the wiring substrate 130. The wiring substrate 130 connects to a connection pad 160 provided on at least one of the first substrate 110 and the second substrate 120. In the specific example illustrated in FIGS. 2A and 2B, connection pads 160 are provided in the connection region 190 outside the display part 180 of

the first substrate 110. In other words, the wiring of the wiring substrate 130 electrically connects to the connection pads 160 provided on the first substrate 110. However, it is sufficient that the wiring substrate 130 connects to the connection pads 160 provided on at least one of the first substrate 110 and the second substrate 120.

[0039] Thus, the display device 10 according to this embodiment includes: a flexible first substrate 110; a flexible second substrate 120 provided facing the first substrate 110; a display component 150 provided between the first substrate 110 and the second substrate 120 in the display part 180 to produce at least one of an optical characteristic change and a light emission; and a wiring substrate 130 provided outside the display part 180 such that at least a portion of the wiring substrate 130 is interposed between the first substrate 110 and the second substrate 120 to connect to a connection pad 160 provided on at least one of the first substrate 110 and the second substrate 120.

[0040] In the display device 10 according to this embodiment having such a configuration, the wiring substrate 130 is fixed between both the first substrate 110 and the second substrate 120. Even in the case where, for example, the wiring substrate 130 tends to lift upward from the first substrate 110, the second substrate 120 presses the wiring substrate 130 and suppresses such lifting. Therefore, the wiring substrate 130 and the first substrate 110 are securely bonded, and the wiring substrate 130 does not easily separate from the first substrate 110. Thereby, the wiring of the wiring substrate 130 is stably connected to the connection pads 160 of the first substrate 110.

[0041] As illustrated in FIG. 1 to FIG. 2B, for example, a bonding layer 181 is provided between the first substrate 110 and the second substrate 120 outside the display part 180 to fixedly bond the first substrate 110 and the second substrate 120. The first substrate 110 and the second substrate 120 are fixed by the bonding layer 181, and therefore the wiring substrate 130 is strongly fixed by the first substrate 110 and the second substrate 120 to at least one of the first substrate 110 and the second substrate 120.

[0042] Although the bonding layer 181 is provided to surround the display part 180 in the specific example illustrated in FIG. 2B, the invention is not limited thereto. The bonding layer 181 may be provided intermittently outside the display part 180, and it is sufficient that the bonding layer 181 fixes the first substrate 110 and the second substrate 120.

Comparative Example

[0043] FIG. 3 is a schematic perspective view illustrating the configuration of a display device of a comparative example.

[0044] FIGS. 4A and 4B are schematic views illustrating the configuration of the display device of the comparative example.

[0045] Namely, FIG. 4A is a plan view, and FIG. 4B is a cross-sectional view along line A-A' of FIG. 4A.

[0046] As illustrated in FIG. 3 to FIG. 4B, a display device 90 of the comparative example also includes a flexible first substrate 110 and a flexible second substrate 120 provided facing the first substrate 110.

[0047] In the case of the display device 90 of the comparative example, no portion of the wiring substrate 130 is interposed between the first substrate 110 and the second substrate 120. The wiring substrate 130 is provided to contact only the first substrate 110. Otherwise, the display device 90 may be